

UNITED STATES PATENT APPLICATION
Non-Linear Adaptive AM/AM and AM/PM Pre-Distortion Compensation
With Time and Temperature Compensation for Low Power Applications

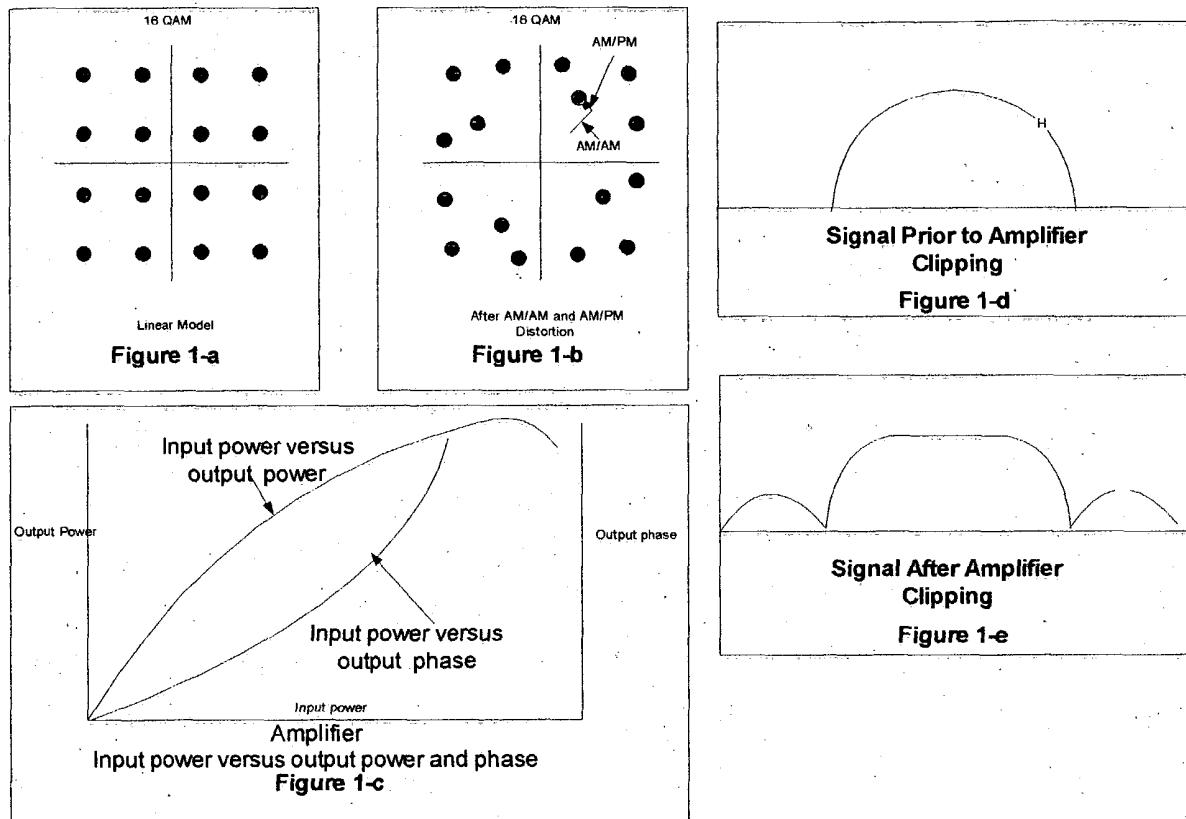


Figure 1: AM/AM and AM/PM Non-linear Distortion of an Amplifier

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TOP LEVEL BLOCK DIAGRAM

NL Transmitter
Digital AM Compensation
Digital PM Compensation

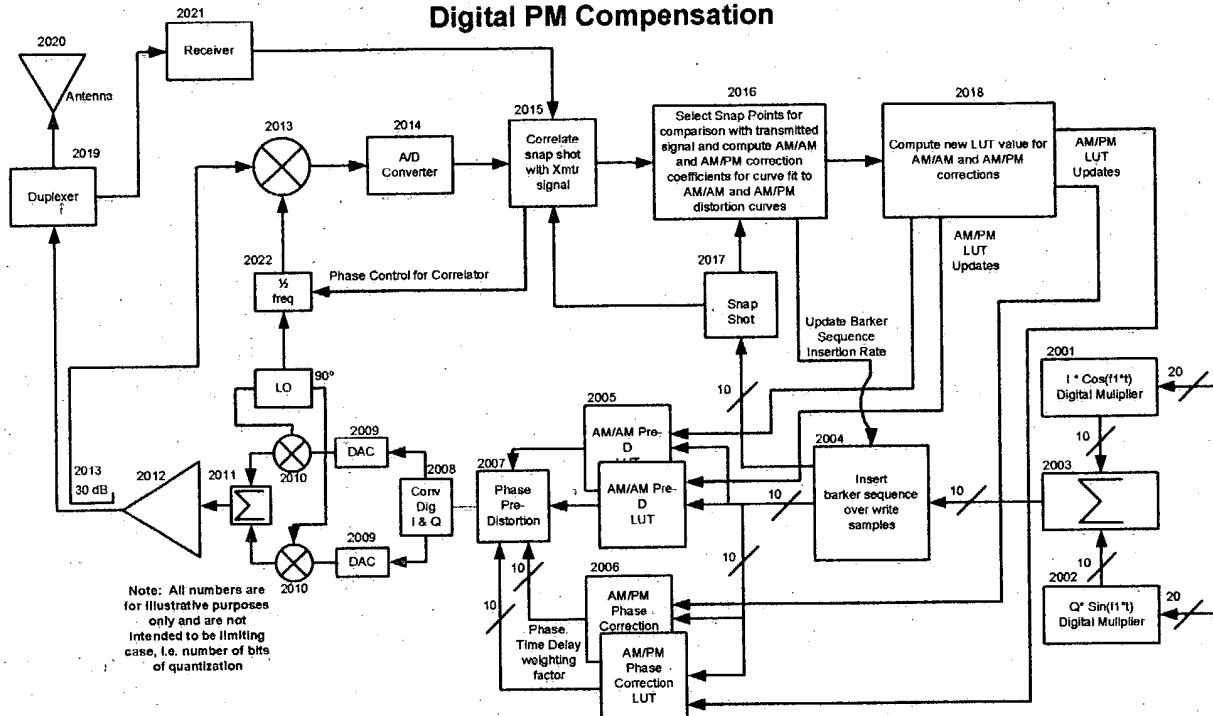


Figure 2

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Non-Linear Adaptive AM/AM and AM/PM Pre-Distortion Compensation
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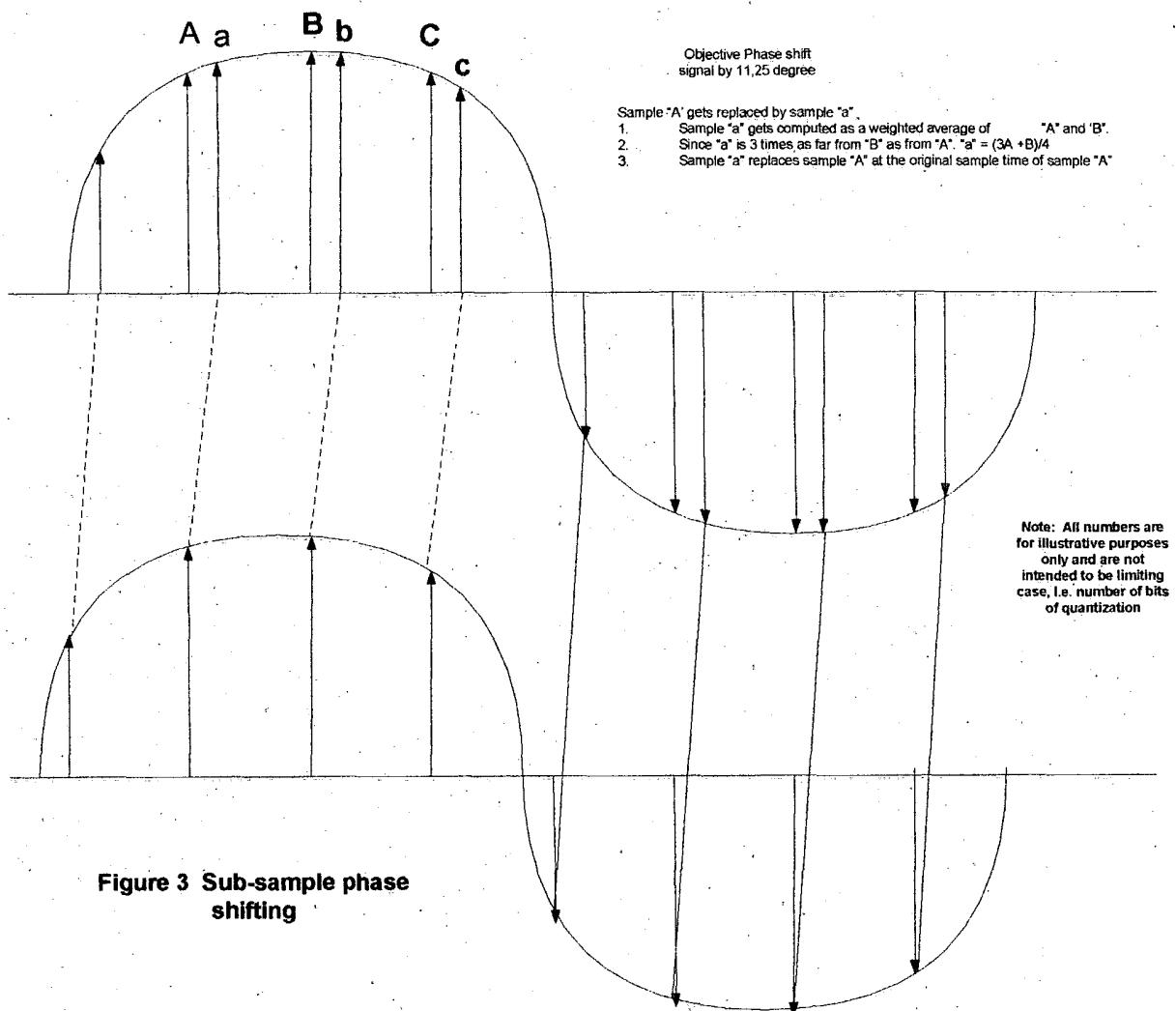


Figure 3 Sub-sample phase shifting

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NL Transmitter with Digital AM Compensation & Analog PM Compensation

Note: All numbers are
 for illustrative purposes
 only and are not
 intended to be limiting
 case, i.e. number of bits
 or quantization

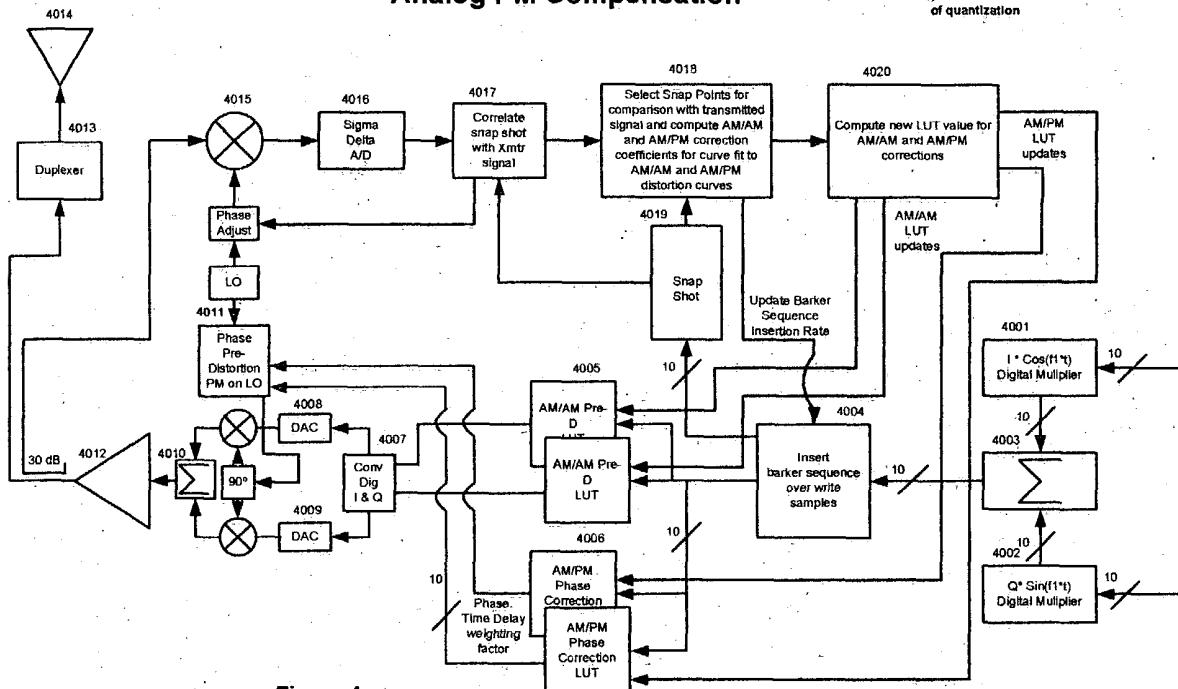


Figure 4

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TOP LEVEL BLOCK DIAGRAM

NL Transmitter

Series Description of Non-linearity Compensation

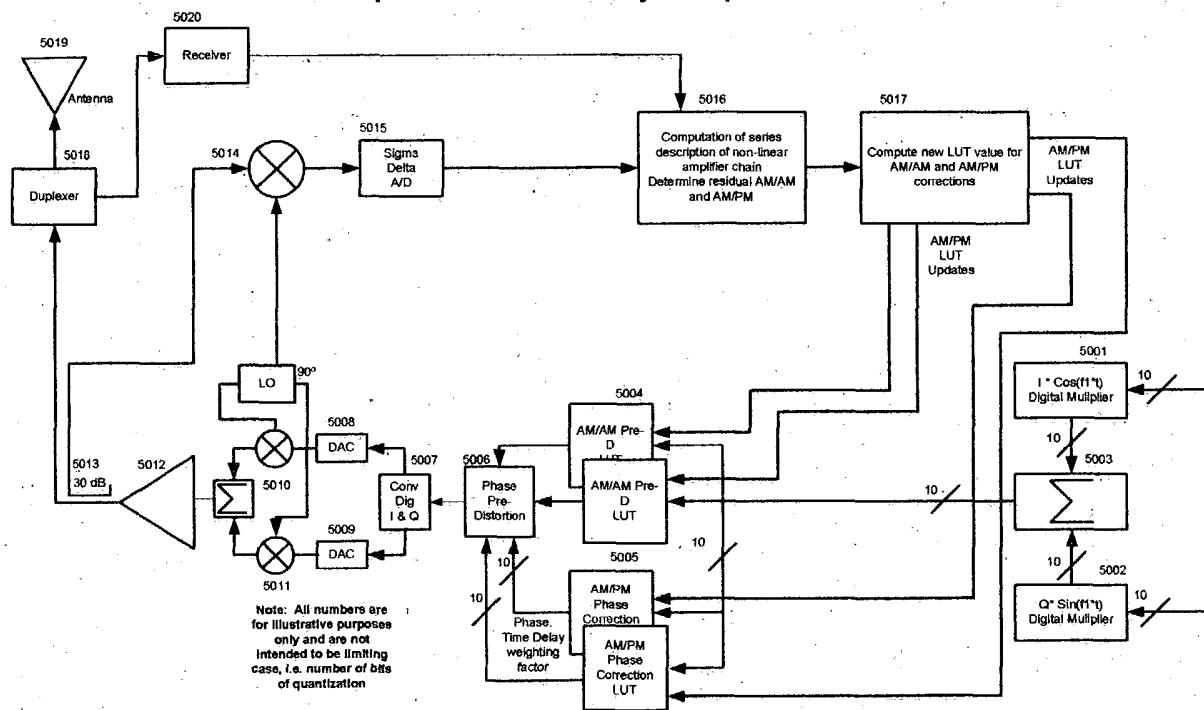


Figure 5 Mathematical Series Description of NL for Pre-distortion